

DescriptionExercise machine with device for handling on wheels

The present patent application refers to an exercise machine with device for handling on wheels.

The purpose of the present invention is to find a solution to the problem faced when an exercise machine, with suitable dimensions and weight to be lifted manually by one operator, must be temporarily moved from its working position.

As it is known to users of body-building machines, the structure of some exercise machines comprises one or more ground platforms that support the bearing frame of the exercise machine.

- 10 Reference is made to exercise machines such as stationary bicycles or spinning bicycles, step machines or treadmills. Although they are mainly used in public gyms, these machines are more and more used in home environments, thanks to their compact size that allows to place them in large rooms, such as bathrooms or bedrooms.
- 15 These machines are quite compact in size and relatively light in weight, and may be moved manually by one or maximum two operators.

In view of the above, manufacturers have decided to provide this kind of exercise machines with wheels to allow the operator to move them around without great effort.

- 20 A similar device is, for example, provided for in spinning bicycles, in view of the fact that many gyms do not have a dedicated room for spinning lessons, and group sessions are usually held in large rooms that are normally used for aerobics or gymnastics.

In view of the above, when lessons are over, spinning bicycles must be moved from the centre of the room and parked one next to the other next to the walls. They will be moved and arranged in their working position before the next lesson begins.

Apart from the organisation of spinning sessions, exercise machines need to

be moved for very different reasons, both in gyms and at home, for example for cleaning, space organization and use.

As mentioned earlier, based on the aforementioned considerations, this kind of exercise machines is normally provided with wheels with fixed axis under 5 the ground platforms, so that the operator can manually move the machine by lifting the opposite side with respect to the wheels and pushing it in the desired direction, while maintaining the machine lifted during handling.

The purpose of the present invention is to eliminate the need for the operator 10 to maintain the machine lifted during handling, thanks to the presence of a new, original device mounted in opposite position with respect to the wheels with fixed axis.

The device comprises a pivot wheel supported at the end of an arm that oscillates freely on the vertical plane and can be placed in two stable positions at the stop limit that correspond to working and idle position, 15 respectively.

More precisely, when the machine is lifted from the ground, the arm is lowered spontaneously because of gravity and remains permanently in lowered position because of a retention mechanism with a spring. This means that when the operator has lifted the machine, the machine is slightly 20 lifted and tilted forward, using the pivot wheel as the only support point in the back.

Assuming that because of the slightly forward inclination the front wheels of the machine touch the ground (if necessary), it appears evident that the exercise machine touches the ground with the wheels only, thus allowing the 25 operator to push the machine and move it, with good manoeuvring capabilities thanks to the pivot wheel.

Moreover, the device of the invention is provided with a pedal that can be pressed to eliminate the action of the retention mechanism, thus allowing the oscillating arm to raise under the weight of the machine on the pivot wheel 30 located at the end of the arm.

For major clarity the description of the machine according to the present invention continues with reference to the enclosed drawings, which are

intended for purposes of illustration only and not in a limiting sense, showing a spinning bicycle according to the invention as an example:

- Fig. 1 is a side view of the machine of the invention, which is supported and moved by means of wheels;
- 5 - Fig. 2 is a perspective view of the machine of Fig. 1;
- Fig. 3 is a side view of the machine of the invention in working condition, with platforms on the ground;
- Fig. 4 is a perspective view of the machine of Fig. 3;
- Fig. 5 is a perspective view of the device mounted on the machine of the
- 10 invention in working condition, that is to say with pivot wheel in lowered position;
- Figs. 6 and 7 are a top and side view of Fig. 5, respectively;
- Fig. 8 is a perspective view of the device mounted on the machine of the invention in idle condition, that is to say with pivoting wheel in raised position;
- 15 - Figs. 9 and 10 are a top and side view of Fig. 8, respectively.

With reference to the aforementioned figures, the machine of the invention (1) is provided with a standing platform (2) with front and back feet (3).

In the case of the bicycle shown in the figures, the platform (2) is divided into two platforms – a front and a back platform – and contains wheels (4) with fixed axis located next to the front edge of the platform (2) before the feet (3), having a suitable height to prevent the wheels (4) from touching the ground, so that the machine (1) stands on the front and back feet (3) when the machine (1) is in working or parking position.

The presence and location of the wheels (4) permit to move the machine (1) on the wheels (4), just like a wheelbarrow, after lifting the platform (2) on the opposite side with respect to the wheels (4) to detach the feet (3) from the ground and let the front wheels (4) touch.

The machine of the invention is characterised by the fact that it is provided with a device (6) located on the platform (2) in opposite position with respect to the wheels (4), with the possibility of holding the machine (1) slightly raised and with the wheels (4) in contact with the ground.

The device (6) incorporates a wheel (7) that is the only support point of the

machine (1) in the back when the machine (1) is held in raised position by the device (6).

More precisely, the wheel (7) is supported at the end of an oscillating arm (8) that is pivoted at the other end on a pin (9) with horizontal axis fixed to the platform (2), in such a way that the arm (8) oscillates freely on the vertical plane under the platform (2).

The arm (8) has a shelf-like configuration with lowered central housing (8a) and a lateral transversal ramp (8b) in lateral position that ends immediately before the housing (8a).

- 10 The ramp (8b) and the housing (8a) act as slide and stop for a bearing (10a) supported at the end of a rod (10), which is provided at the other end with a collar (10b) for pivoting at a bearing pin with vertical axis fixed to the platform (2), in such a way that the rod (10) freely oscillates on the horizontal plane under the platform (2).
- 15 The rod (10) is constantly subject to the action of a return spring (11) that tends to make the bearing (10a) raise onto the ramp (8b) until it engages in the housing (8a).

The device (6) also comprises a pedal (12) that, when pressed, brings the rod (10) back, thus overcoming the action of the return spring (11) to remove the bearing (10a) from the housing (8a) and move it down the ramp (8b).

The pedal (12) is pivoted onto the platform (2) and connected by means of a connecting-rod (13) to a cylindrical support (14) that is inserted and slides inside a support and guide bush (15) fixed under the platform (2) with longitudinal axis in horizontal position perpendicular to the axis of the arm (8).

- 20 When the bearing (10a) is inside the housing (8a), the support (14) is in the maximum backward position, which corresponds to lifting the pedal above the platform (2), as shown in Figs. 1 and 2.

In this condition the machine (1) stands on the front wheels (4) and on the back wheel (7) and can therefore be moved by simply pushing it.

- 25 If the pedal (12) is pressed downwards, it actuates the support (14) that pushes the rod (10) backwards, in spite of the resistance offered by the return spring (11), thus transferring the bearing (10a) to the side of the arm

(8), which is now free to move upwards, letting the platform (2) go down and the feet (3) touch the ground.

Once the feet (3) touch the ground, the arm (8) goes back to the maximum lifting position, so that the bearing (10a) is forced to remain still on the side of the arm (8), until the arm (8) makes a new descending travel because the machine (1) is lifted from the opposite side with respect to the wheels (4), that is to say from the side where the device (6) is mounted.

Although reference is made to exercise machines, preferably with limited weight and size, the invention can be advantageously used for heavy exercise machines that are usually lifted by means of traditional lifting devices, such as hoists or forklift trucks.

In these cases the exercise machine could be provided with one or more devices (6).